Remarks:

Reconsideration of the application is requested.

Claims 1-12 are now in the application. Claims 1, 2, and 6-10 have been amended. A marked-up version of the claims is attached hereto on separate pages. Claims 11 and 12 have been added, for which support can be found on page 18, line 18 to page 19, line 2. The specification has been amended to correct typographical errors. A marked-up version of the changes is attached hereto on separate pages. Support for the changes to the specification can be found on page 4, lines 8-12 and page 21, lines 1-11. No new matter has been added.

In item 1 on page 2 of the above-identified Office action, claims 6-9 have been objected to because of the following informalities.

The Examiner stated that claim 6 recites the limitation "glazed roller" in line 2. The Examiner further stated that based on the disclosure, it appears applicant intended to claim a "glazing roller". Claim 6 has been amended to correct the typographical error, and now reads "glazing roller". Therefore, the objection by the Examiner is now moot.

The Examiner stated claims 6-9 use the term "said first-mentioned roller". The Examiner stated that there is insufficient antecedent basis for this limitation in the claims. Claims 6-9 have been amended so as to facilitate prosecution of the application and now read "said roller". Therefore, the objection by the Examiner is now moot.

In item 3 on page 2 of the above-identified Office action, claim 2 has been rejected as being indefinite under 35 U.S.C. § 112.

More specifically, the Examiner has stated that the term "at least approximately" in line 3 is a relative term, which renders the claim indefinite. The Examiner stated that while the specification provides a range of the angle α and hence a definition of the word "approximately" on page 21, lines 4-11, the term "at least approximately" is not defined by the claim. The Examiner continued to state that the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Examiner stated that the limitation "radial oscillation direction relative to said roller" has been rendered indefinite by the use of the term "at least approximately". The claim has been amended so as to facilitate prosecution of the application, and now

provides a range for the deviation of the oscillation direction. Therefore, the rejection is now moot.

Support for these changes may be found on page 21, lines 4-10 of the Specification of the instant application.

It is accordingly believed that the specification and the claims meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved. The above-noted changes to the claims are provided solely for cosmetic or clarificatory reasons. The changes are not provided for overcoming the prior art nor for any reason related to the statutory requirements for a patent.

In item 5 on page 3 of the Office action, claims 1, 3, 4, and 8-10 have been rejected as being obvious over Jeschke et al. (U.S. Patent No. 4,089,264) in view of Rambausek (U.S. Patent No. 4,699,055) under 35 U.S.C. § 103.

The rejections have been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application. The claims are patentable for the reasons set forth below. Support for the changes is found in

Fig. 2 and on page 18, line 24 to page 19, line 2 of the specification.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 1 and 10 call for, *inter alia*:

in the spaced-away position the metering unit is lifted to an outlet height of <u>at least 20 micrometers and less than 100 micrometers</u> from the roller."

Clearly, the references do not show or suggest the metering unit being lifted in the spaced away position to an outlet height of at least 20 micrometers and less than 100 micrometers from said roller, as recited in claims 1 and 10 of the instant application.

Since claim 1 is believed to be allowable, claims 3, 4, and 8-10 are believed to be allowable as well

Even though the claims are believed to be patentable, further discussion of claim 9 is given. The Jeschke et al. reference does not disclose an inking unit in which the metering elements are mounted alternatingly with each other such that they can be lifted off of the roller.

Claim 12 calls for, *inter alia*:

mounting the metering element so that it is oscillatable at a frequency within a range of 200 Hz to 10 kHz between an engaging position and a spaced-away position of the metering element.

The references do not show or suggest mounting this mounting feature, as recited in claim 12. Neither the ink knife (6) of Jeschke et al. nor the metering element (12) of Rambausek oscillates at frequency within the claimed range.

Regarding item 6 on page 5 of the Office action, rejecting claims 2 and 5 over Jeschke et al. (U.S. Patent No. 4,089,264) in view of Rambausek (U.S. Patent No. 4,699,055) and further in view of Cappel et al. (U.S. Patent No. 3,913,479) under 35 U.S.C. § 103, it is noted that since claim 1 is believed to be allowable claims 2 and 5 are allowable as well.

Even though claim 5 is believed to be allowable, further discussion of claim 5 is given. It is noted that the Cappel et al. reference discloses a metering bar (75) that is neither suitable for replacing the ink knife (6) disclosed in the Jeschke et al. reference, nor for replacing the metering element (12) disclosed in the Rambausek reference. The person

of ordinary skill in the art would recognize from Fig. 1 in Jeschke et al. that the working area of the ink knife must essentially be profiled as a triangle and therefore should not have a constant cross-sectional thickness. The assumption that a person of ordinary skill in the art would replace the ink knife (6) having the triangular working area of Jeschke et al. with the metering bar (75) of the Cappel et al. reference would correspond to a retrospective view, due to the entirely different constructive facts which concern the drive of the ink knife (6) and the metering bar (75). Furthermore, the person of ordinary skill in the art would recognize from Fig. 1 in Rambausek that the metering element (12) disclosed therein must be directed tangentially relatively to the roller (8). Also, from Fig. 1 of Cappel et al. the metering bar (75) must be radially directed to the roller (78). Therefore, the metering element (12) of Rambausek and the metering bar (75) of Cappel et al. are incompatible with one another.

Regarding item 7 on page 6 of the Office action, rejecting claim 6 over Jeschke et al. (U.S. Patent No. 4,089,264) in view of Rambausek (U.S. Patent No. 4,699,055) and in further view of Olawsky et al. (U.S. Patent No. 5,842,416) under 35 U.S.C. § 103, it noted that since claim 1 is believed to be allowable claim 6 is allowable as well.

Regarding item 8 on page 6 of the Office action, rejecting claim 7 over Jeschke et al. (U.S. Patent No. 4,089,264) in view of Rambausek (U.S. Patent No. 4,699,055) and in further view of Uera et al. (U.S. Patent No. 5,603,262) under 35 U.S.C. § 103, it is noted that since claim 1 is believed to be allowable claim 7 is allowable as well.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 10, and 12. Claims 1, 10, and 12 are, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-12 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner & Greenberg P.A., No. 12-1099.

Respectfully submitted,

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For Applicant(s)

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February 21, 2003

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A-2986

Marked-up version of the claims:

Claim 1 (amended). An inking unit in a printing press, comprising an ink-metering device having at least one metering element operatively engaging with a roller, said roller being one of an ink form roller and a roller operatively engaging with an ink form roller, and an oscillation device assigned to said metering element for mounting said metering element so that it is [oscillatable] oscillated between: [a feeding]

an engaging position of said metering element; and

a spaced-away position of [the] said metering element in which said metering unit is lifted to an outlet height of at least 20 micrometers and less than 100 micrometers from said roller.

Claim 2 (amended). The inking unit according to claim 1, wherein:

said roller has a radial direction; and

said oscillation device has a guide [for] guiding said metering element [in an at least approximately radial oscillation direction relative to said roller] in an

oscillation direction deviating in a range from 0° to 20° in said radial direction of said roller.

Claim 6 (amended). The inking unit according to claim 1, including at least one [glazed] glazing roller disposed downline from said metering element along a peripheral line of said first-mentioned roller, said [glazed] glazing roller being exclusively in rolling contact with said first-mentioned roller.

Claim 7 (amended). The inking-unit according to claim 1, including an ink-feeding device disposed upline of said metering element alongside a peripheral line of said [first-mentioned] roller.

Claim 8 (amended). The inking unit according to claim 1, including at least another metering element assigned to said [first-mentioned] roller.

Claim 9 (amended). The inking unit according to claim 8, wherein said metering elements are mounted alternatingly with one another for removal thereof from said [first-mentioned] roller.

Claim 10 (amended). A printing press having an inking unit comprising an ink-metering device having at least one metering

element operatively engaging with a roller, said roller being one of an ink form roller and a roller operatively engaging with an ink form roller, and an oscillation device assigned to said metering element for mounting said metering element so that it is oscillatable between [a feeding] an engaging position and a spaced-away position of the metering element.

A-2986

Marked-up version of the specification:

Replace the paragraph between page 4, lines 8-17 with the following:

--With the foregoing and other objects in view, there is provided, in accordance with one aspect of the invention, an inking unit in a printing press, comprising an ink-metering device having at least one metering element operatively engaging with a roller, said roller being one of an ink form roller and a roller operatively engaging with an ink form roller, and an oscillation device assigned to said metering element for mounting said metering element so that it is oscillatable between [a feeding] an engaging position and a spaced-away position of the metering element.--

Replace the paragraph between page 6, lines 6-14 with the following:

--In accordance with another aspect of the invention, there is provided a printing press having an inking unit comprising an ink-metering device having at least one metering element operatively engaging with a roller, the roller being one of an ink form roller and a roller operatively engaging with an ink form roller, and an oscillation device assigned to the

metering element for mounting the metering element so that it is oscillatable between [a feeding] an engaging position and a spaced-away position of the metering element.--

Replace the paragraph between page 6, lines 16-22 with the following:

--Thus, the inking unit in a printing press according to the invention, having an ink-metering device with at least one metering element, which engages in a feeding position with the roller, the latter being either a form roller or being a roller disposed so that the metering element is oscillatable between [a feeding] an engaging position and a spaced-away position by an oscillation device assigned to the metering element.--

Replace the paragraph between page 8, line 4 and page 9, line 6 with the following:

--With a development regarding a frequency and/or amplitude-controlled ink-density modification, an electromagnetic oscillation drive is assigned to the metering element, which is at the same time also a component of the oscillation device. Through a corresponding activation of the oscillation drive, the frequency of the oscillation of the metering element, the period or frequency number of the oscillation,

respectively, per one revolution of the roller and thereby the number and distance to one another, of ink lines that have been formed on the roller, can be modified. The amplitude of the oscillation of the metering element that corresponds to the spaced-away position is modifiable, so that the printing ink that has been metered with the metering element can form low elevations with small amplitude and high elevations with big amplitude, like for example ink lines on the outer cylindrical surface of the roller. What is also an advantage of the control of the amount of metering, which ensues via the frequency and/or amplitude, is that the contact-pressure of the metering element against the roller can be chosen independently from the set amount of metering. To reduce the film-layer thickness of the ink lines, which is produced with the metering element on the roller, an increase of the contact-pressure of the metering element in the [feeding] engaging position on the roller is unnecessary. In other words, because there is a reduction in the metering-amount does not mean that there is an increase in the abrasion of the roller and metering element that is dependent upon the contact-pressure. With each set metering amount, the contact-pressure can be the same and comparatively low.--

Replace the paragraph between page 9, line 12 and page 10 line 21 with the following:

--With an advantageous development regarding the compensation for a shortening of the metering element, which is caused by wear, a spring which is at the same time also a component of the oscillation-device is assigned to the metering element. The spring pushes or pulls the metering element out of the spaced-away position back into the [feeding] engaging position. Even though the tension of the spring is greatest with the metering element located in the spaced-away position, the spring is yet also in bias with the metering element, when the latter is located in the [feeding] engaging position. The modification of the covered spring-path of the spring between the spaced-away position and the [feeding] engaging position, resulting from the shortening of the metering element due to wear, is so small that the modification practically has no effect whatsoever on the size of the contact-pressure of the metering element against the roller. In other words, the spring still forces the metering element against the roller with the same force, in a more worn and shortened condition, as in the less worn condition of the metering element. The characteristic line of the spring is chosen so that the corresponding modification of the spring path in the shortening of the metering element cannot have an undesirable effect. The assignment of the spring to the metering element makes the automatic adjustment with the wear of the metering element possible, and also with the preferred development wherein the metering element has an at least approximate

radial oscillation direction relative to the roller. The spring adjusts the wearing metering element in precisely this at least approximate radial oscillation direction. A sprung formation of the metering element, for example, in the form of a flexible spring-steel blade or knife, is still possible yet with the existence of the spring that is assigned to the metering element, however, the spring makes a non-flexible, rigid formation of the metering element in a multiplicity of geometric forms possible, like for example as a rigid metering bar, as a rigid metering eccentric or as a rigid metering slider.--

Replace the paragraph between page 13, line 20 and page 14, line 5 with the following:

--For example, with the aforementioned metering device, the metering elements seated within the row of even-numbered positions can form prongs of a first metering comb, and the metering elements which are seated within the row of uneven-numbered positions can form prongs of a second metering comb. The metering combs perform oscillations which are phase-shifted from one another between the [feeding] engaging position and the spaced-apart position, so that the metering elements which are seated on the even-numbered positions are always set against the roller in exchange with the metering elements which are seated on the uneven-numbered positions.--

Replace the paragraph between page 18, line 18 and page 19, line 11 with the following:

--In Fig. 2, a metering element of the ink-metering device 12, which serves as a metering blade 18, is shown in a spaced-away position 18.1 and in [a feeding] an engaging position 18.2 relative to the roller 7. During metering, the metering element 18 oscillates between the spaced-away position 18.1 and the [feeding] engaging position 18.2 in a linear oscillating direction 19, with a frequency that is adjustable within a range of 200 Hz to 10 kHz. In this regard, the metering blade 18 is periodically lifted an outlet height 20 from the roller 7, the outlet height being preferably within a range of 20 to 40 μm and, in any case, less than 100 μm. The spaced-away position 18.1 wherein the metering blade 18 reaches the outlet height 20, and the [feeding] engaging position 18.2 are reversal points of the oscillation of the metering blade 18. The outlet height 20 is much larger than the largest dimension of dirt particles 21, 22 found in a printing ink that forms the ink film 9, so that the dirt particles 21, 22 can pass through a metering gap determined by the outlet height 20 and located between the metering blade 18 and the outer cylindrical surface of the roller 7, without getting stuck in the metering gap.--

Replace the paragraph between page 21, lines 1-11 with the following:

--The oscillation-direction 19 and a tangential line 28 to the roller 7 intersect at a contact-point 29, at which the metering blade 18 is placed on the roller 7. An angle α with reference to the contact-point 29 as the vertex thereof, and subtended respectively by the oscillation-direction line 19 and the tangential line 28, may have a value of from 70° to 90°, so that the oscillating direction 19 either slightly counter-rotatingly aligned (α = 90°) in radial direction of the roller 7 or [(90° > α = 70°)] <u>(90° > α > 70°)</u> with respect to a rotational direction 30 of the roller 7.--

Replace the paragraph between page 21, lines 17-24 with the following:

--In Figs. 3a and 3b, a possible first embodiment of an oscillating device 31 of the ink-metering-device 12 is illustrated. An oscillation drive 32 for exciting the oscillation of the metering blade 18 and a guide 33, which provides the metering blade 18 with the oscillating direction 19, belong to the oscillating device 31, which periodically swings the metering blade 18 out of the spaced-away position

18.1 into the [feeding] engaging position 18.2 and back again.--

Replace the paragraph between page 22, line 15 and page 23, line 3 with the following:

--During the course of the oscillation of the metering blade 18, it is alternately adjusted by the oscillating drive 32 from the [feeding] engaging position 18.2 thereof to the spaced-away position 18.1 thereof and restored by the spring 41 from the spaced-away position 18.1 to the [feeding] engaging position 18.2. An electronic control device 42, with which the current cycle and, thereby, the frequency of the oscillation of the metering blade 18 is adjustable, decreases and increases the amperage of the electrical current flowing through the coil 39, and corresponding to the set frequency, so that the spring 41 forces the rotor 35 out of the stator 34 when the amperage is decreased, e.g., the current is turned off, and a magnetic force effective between the stator 34 and the rotor 35 retracts the rotor 35 into the stator 34, when the amperage is increased, e.g., the current is turned on.--

Replace the paragraph between page 24, lines 1-17 with the following:

--In Fig. 3a, the metering element 18 is illustrated in a less worn condition. In comparison therewith, Fig. 3b shows the metering element 18 in a more worn condition, wherein the work region 44 is shortened due to the abrasion thereof by the roller 7. In proportion with the greater or increased shortening of the metering element 18, the traversed spring path of the spring 41 increases between the positions 18.1 and 18.2, so that the shortening is compensated for. The increase in the spring path is so little and the spring characteristic line of the spring 41 is selected so that the contact-pressure of the metering element 18, which is effected by the spring 41, in the [feeding] engaging position 18.2 against the roller 7 and the outlet height 20 in the spaced-away position 18.1, do not change to any noticeable extent so as to influence the metering accuracy, and are in fact preserved to a marked extent.--

Replace the paragraph between page 24, lines 18-25 with the following:

--The coil 39, which serves as a moving coil is formed so that it always produces the same power-jolt and, thereby, always the same outlet height 20 for a like electrical pulse via the control device 42, independently of the assumed position thereof, in the [feeding] engaging position 18.2, depending

upon the shortening of the metering element 18 relative to the stator 34.--

Replace the paragraph between page 25, lines 1-16 with the following:

--The spaced-away position 18.1 and, thereby, the outlet height 20 are precisely adjustable by an adjusting device 46, in that the oscillation device 31 is adjustable by the adjusting device 46 either towards or away from the roller 7. The adjusting device 46 is formed as a screw joint connecting the stator 34 with a frame of the printing press 1, due to the contortion of which the spacing of the oscillation device 31 is adjustable relative to the roller 7. What is essential is that the spring 41 loads the metering element 18 and pushes against the roller 7, respectively, when the metering element 18 is located in the [feeding] engaging position 18.2. Not only does the spring 41 compensate for the shortening of the metering element 18, but also for occurring non-circularities of the roller 7. Additionally, variations in the diameter of the roller 7 caused by operational fluctuations of temperature are compensated for by the spring 41.--

Replace the paragraph between page 27, lines 7-14 with the following:

--In a second oscillation phase (note Fig. 5b) the metering elements 18, 18', 18'' and 18''', which are seated on the uneven-numbered as well as the even-numbered location numbers in the respective [feeding] engaging position 18.2 thereof are located roller 7. The transition from the first to the second oscillation phase results from the oscillation of the metering elements 18', 18''', which are seated on the even-numbered location-numbers, into the closed position thereof.--

Replace the paragraph between page 27, line 16 and page 28, line 6 with the following:

--In a third oscillation phase (note Fig. 5c) the metering elements 18, 18', 18'' and 18''' have an inverse oscillating position with respect to the first oscillation phase, the metering elements 18' and 18''', which are seated on the even-numbered location numbers, being located in the respective [feeding] engaging position 18.2 thereof, and the metering elements 18 and 18'', which are seated on the uneven-numbered location numbers, being located in the respective spaced-away position 18.1 thereof, both positions being relative to the roller 7. The transition from the second to the third oscillation phase results from the oscillation of the metering elements 18 and 18'', which are seated on the uneven-numbered location numbers, into the opened position thereof. During the third oscillation phase, an ink line is formed on the roller

7, the ink elevations of which, namely ink elevations 24, 24', 24'' are removed by gaps from the ink elevations 23, 23', 23'' of the ink line formed in the first oscillation phase.--